

DOCUMENT VESTA-TDS-WR550-EN-001	ISSUED 2026-07-24	REVISION Rev. 01
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PRODUCT / WEATHER SEALING

WR550 Weather-Resistant Silicone Sealant

One-component neutral-oxime weather-resistant silicone for compatible non-structural interior and exterior building-envelope joints.

CURE TYPE One-component, moisture-curing neutral cure	LOAD ROLE Not intended for structural glazing or permanent load transfer.	ENVIRONMENT Interior and exterior non-structural building-envelope weather-sealing joints, subject to substrate and project review.	CHEMISTRY Neutral oxime cure
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Product description

WR550 is a one-component, moisture-curing, neutral oxime silicone weather-resistant sealant supplied as a non-sag paste. It cures from the exposed surface inward to form a flexible silicone elastomer for correctly designed, properly prepared and compatible non-structural weather-sealing joints.

Key benefits

Durable weather protection Proven UV and water resistance helps maintain a durable, watertight bond through harsh weather exposure and prolonged UV radiation.
High-movement resilience ±35% movement capability and 93% elastic recovery help the weatherseal absorb building movement and rebound through repeated expansion and compression cycles.
Controlled neutral-cure application Neutral-cure chemistry helps reduce corrosion risk on many common construction metals, while 0 mm vertical sag supports clean vertical and overhead application.

Recommended applications

Exterior window and door perimeter Exterior frame-perimeter weather-sealing joints are within the current WR550 positioning, subject to verified substrate compatibility, joint design, and installation conditions.
Facade and curtain-wall perimeter Compatible non-structural facade and curtain-wall perimeter weather seals are within the current WR550 positioning; structural glazing is excluded.
Roofing and facade details Selected roofing and facade weather-sealing details are within the current positioning only where the actual membrane, coating, substrate, and adjacent materials have been reviewed.

Structural glazing, fire rating, permanent immersion, and compatibility with every roof membrane are not claimed without product-specific and project-specific evidence.

SELECTION / EVIDENCE

Applications, benefits and substrate suitability

Intended uses

JOINT / LOCATION	SUBSTRATE COMBINATION	EXPOSURE / MOVEMENT	LOAD ROLE	CONTROLLED STATEMENT
Perimeter weather-sealing joint / Exterior window and door perimeter	Aluminum window or door frames with adjacent concrete, masonry, mortar or rendered wall substrates; actual project materials require adhesion review.	Exterior weather exposure; Project movement requirement must be calculated	Non-structural	Exterior frame-perimeter weather-sealing joints are within the current WR550 positioning, subject to verified substrate compatibility, joint design, and installation conditions.
Perimeter and connection weather-sealing joint / Facade and curtain-wall perimeter	Non-structural curtain-wall component joints, including float glass and anodized aluminum where the actual finishes are verified.	Exterior UV, rain, and temperature variation; Project movement requirement must be calculated	Non-structural	Compatible non-structural facade and curtain-wall perimeter weather seals are within the current WR550 positioning; structural glazing is excluded.
Connection and movement joint / Roofing and facade details	Selected metal-cladding, façade-panel and movement-joint combinations; membranes and adjacent materials require compatibility review.	Exterior weather exposure; Project movement requirement must be calculated	Non-structural	Selected roofing and facade weather-sealing details are within the current positioning only where the actual membrane, coating, substrate, and adjacent materials have been reviewed.

Features and benefits

FEATURE	PERFORMANCE STATEMENT	PRACTICAL VALUE	CONDITIONS / LIMITS
Weather resistance	No adhesion failure after water immersion and UV exposure under JC/T 485-2007, Clause 5.12, on anodized aluminum and float glass.	Proven UV and water resistance helps maintain a durable, watertight bond through harsh weather exposure and prolonged UV radiation.	Tested on anodized aluminum and float glass; confirm adhesion and compatibility on the actual project materials.
Movement accommodation	GB/T 14683-2017 classification SR-I-Gw-35HM with ±35% movement capability.	±35% movement capability absorbs significant thermal expansion and wind-driven movement in demanding facade and roofing joints.	Use in correctly designed non-structural joints with calculated movement and verified substrates.
Neutral cure	One-component, moisture-curing neutral oxime system designed for building-envelope weather sealing.	Neutral-cure chemistry helps reduce corrosion risk on many common construction metals while supporting reliable building-envelope sealing.	Verify compatibility on sensitive metals, coatings, plastics and membranes.
Non-sag application	0 mm vertical sag recorded under GB/T 13477.6-2002.	0 mm vertical sag and premium paste consistency provide clean bead placement and excellent tooling control on wide vertical and overhead joints.	Apply within the stated temperature range and approved joint geometry.
Elastic recovery	93% elastic recovery recorded under GB/T 13477.17-2017.	93% elastic recovery provides excellent shape memory, helping the weatherseal remain resilient through repeated expansion and compression cycles.	Evaluate together with the ±35% movement capability and the approved joint design.

Substrate suitability matrix

Initial adhesion is not proof of long-term project suitability. Substrate selection remains subject to product-specific and project-specific testing.

SUBSTRATE	STATUS	TEST	PRIMER	PRIMARY RISK	SEE
Clear float glass	Test Required	Required	Determine by adhesion testing on the actual project substrate.	Conditioned-adhesion tests showed no failure on float glass; coatings, frits, inks, treatments and contamination can affect adhesion.	Type-test evidence plus project-specific adhesion and compatibility test
Coated glass	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Coating chemistry and edge requirements vary.	Compatibility and adhesion test
Glazed ceramic	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Product-specific adhesion result required.	Substrate and Primer Chart
Anodized aluminum	Test Required	Required	Determine by adhesion testing on the actual project finish.	Conditioned-adhesion tests showed no failure on anodized aluminum; anodizing type, finish and surface condition can affect adhesion.	Type-test evidence plus project-specific adhesion and compatibility test
Powder-coated aluminum	Primer May Be Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Coating resin, texture, and coating adhesion vary.	Adhesion and compatibility test
PVDF-coated aluminum	Primer May Be Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Low surface energy and coating-specific compatibility.	Adhesion and compatibility test
Stainless steel	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Oil and processing residue may affect adhesion.	Adhesion test
Galvanized steel	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Surface treatment, oxidation, and oils vary.	Adhesion test
Concrete	Primer May Be Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Laitance, moisture, curing compounds, dust, and porosity.	Adhesion test and primer assessment
Mortar	Primer May Be Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Weak surface layer, moisture, dust, and porosity.	Adhesion test and primer assessment
Rendered surfaces	Primer May Be Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Coating or render cohesion may control failure.	Pull-off and adhesion assessment
Natural stone	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Potential staining, migration, discoloration, and variable porosity.	Stain and compatibility test
PVC	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Plasticizer migration and formulation variability.	Adhesion and compatibility test
Acrylic	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Stress cracking and formulation-specific compatibility.	Compatibility and adhesion test
Polycarbonate	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Stress cracking, coating, and cleaner compatibility.	Compatibility and adhesion test
EPDM	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Migration and formulation variability.	Compatibility and adhesion test

SUBSTRATE	STATUS	TEST	PRIMER	PRIMARY RISK	SEE
Neoprene	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Migration, discoloration, and variable adhesion.	Compatibility and adhesion test
Bituminous membrane	Not Recommended	Required	No universal primer recommendation; specialist technical review is required.	Oil migration, discoloration, softening, and adhesion loss.	Membrane-manufacturer approval and compatibility test
PE	Not Recommended	Required	No universal primer recommendation; specialist technical review is required.	Low surface energy.	Specialist technical review
PP	Not Recommended	Required	No universal primer recommendation; specialist technical review is required.	Low surface energy.	Specialist technical review
PTFE	Not Recommended	Required	No universal primer recommendation; specialist technical review is required.	Very low surface energy.	Specialist technical review
Mirror backing	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Backing attack, staining, or inadequate load design.	Mirror manufacturer approval and compatibility test
Laminated glass	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	Interlayer and edge compatibility.	Compatibility test
Insulating glass secondary seal	Test Required	Required	Determine by project adhesion testing; no universal primer code is approved.	System compatibility and IG-unit durability are product-specific.	IG manufacturer approval and compatibility test

PERFORMANCE / CONDITIONS

Technical data and cure interpretation

Technical properties

PROPERTY	VALUE	VALUE TYPE	TEST METHOD	CONDITION
Cure system	One-component, moisture-curing, neutral oxime cure	Typical value	Manufacturer product declaration	Uncured one-component sealant
Appearance	Fine, uniform paste without bubbles, skinning, gel particles or lumps	Tested result	GB/T 14683-2017, Clause 6.2	Tested to GB/T 14683-2017
Consistency	Non-sag paste	Typical value	Product declaration; supported by 0 mm sag result	Uncured material
Density	1.49 g/cm ³	Tested result	GB/T 13477.2-2018	Declared range: 1.50 ±0.1 g/cm ³
Skin formation time	25 min	Typical value	Product performance assessment	23°C / 50% RH
Tack-free time	1 h	Tested result	GB/T 13477.5-2002	Tested value
Cure rate	2–3 mm/24 h	Typical value	Product performance assessment	23°C / 50% RH
Shore A hardness	40 Shore A	Typical value	Product performance assessment	Cured sample
Tensile strength	1.2 MPa	Typical value	Product performance assessment	Cured specimen
Elongation at break	350 %	Typical value	Product performance assessment	Cured specimen

PROPERTY	VALUE	VALUE TYPE	TEST METHOD	CONDITION
Modulus at 100% elongation	0.6 MPa	Tested result	GB/T 13477.8-2017	23°C; 100% elongation measurement point established by the product owner
Movement capability	±35 %	Declared classification	GB/T 14683-2017, Class 35	Declared from classification SR-I-Gw-35HM; correctly designed joints only
Elastic recovery	93 %	Tested result	GB/T 13477.17-2017	Tested under the stated method
Sag or slump	0 mm	Tested result	GB/T 13477.6-2002	0 mm vertical sag
Application temperature	+5 to +40 °C	Product specification	Manufacturer application instruction	Ambient and substrate temperature; preferred material/substrate temperature +15 to +25°C
Service temperature	-40 to +150 °C	Product specification	Product specification	After full cure; review sustained high-temperature exposure
VOC	<50 g/L	Product specification	Product specification	Product declaration; confirm project-specific regulatory requirements
Packaging	300 mL cartridge; 600 mL foil sausage	Product specification	Commercial product declaration	Availability may vary by market, color and order quantity
Available colors	Black; White; Grey; Clear	Product specification	Commercial product declaration	Availability may vary by market and package format
Shelf life	12 months	Product specification	Manufacturer storage specification	From date of manufacture in original, unopened and undamaged packaging at +5°C to +27°C
Extrudability	643 mL/min	Tested result	GB/T 13477.3-2017	Tested result
Adhesion at Constant Elongation	No failure	Tested result	GB/T 13477.10-2017	Test substrates: anodized aluminum and float glass.
Adhesion at Constant Elongation After Water Immersion	No failure	Tested result	GB/T 13477.11-2017	Test substrates: anodized aluminum and float glass.
Adhesion After Cold Draw-Hot Press Cycle	No failure	Tested result	GB/T 13477.13-2002	Test substrates: anodized aluminum and float glass.
Adhesion After Water Immersion and UV Exposure	No failure	Tested result	JC/T 485-2007, Clause 5.12	Test substrates: anodized aluminum and float glass.
Mass Loss Rate	3.1 %	Tested result	GB/T 13477.19-2017	Tested result
Alkane Plasticizer	Not detected	Tested result	GB/T 31851-2015	Tested result

Values are provided for product comparison and are not intended as batch acceptance specifications.

Standards and approvals

RELATIONSHIP	STANDARD / VERSION	CLASSIFICATION	EVIDENCE
Performance verified against	GB/T 14683, Silicone and Modified Silicone Sealants for Building / 2017	SR-I-Gw-35HM	Test evidence held on file

Cure stages are not interchangeable

STAGE	MEANING	PRODUCT VALUE
Skin formation	An exposed surface skin forms; this is not through cure, final adhesion or return to service.	Approx. 25 min
Tack-free	The exposed surface no longer transfers material under the stated test; this is not full cure.	1 h
Through cure	Approximate inward cure rate under standard conditions; actual rate depends on geometry and environment.	Approx. 2–3 mm/24 h
Full cure	For ordinary joints around 6 mm deep, allow approximately 7 days under standard conditions. Joints 10–15 mm deep or exposed to adverse conditions may require approximately 14 days or longer.	Approx. 7; 14 or longer for deeper/adverse joints d

WR550 is a one-component, moisture-curing sealant that cures from the exposed surface toward the interior. Temperature, relative humidity, depth, geometry, air circulation and confinement affect cure rate.

Temperature and relative humidity

Sealant depth and joint geometry

Air circulation, substrate moisture behavior, and degree of confinement

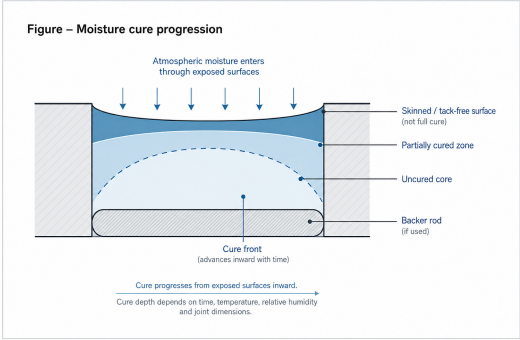


Figure 3.1 - Cure profile framework. Diagram not to scale.

GEOMETRY / MOVEMENT

Joint design

Joint design principles

Joint width must be calculated from expected movement, product movement capability, building and substrate movement, and construction tolerances.

Use two-sided adhesion with a compatible closed-cell polyethylene backer rod or bond-breaker tape to control depth and isolate the joint base.

Preferred width-to-depth ratio is 2:1; an approximate range of 2:1 to 4:1 may be used within the stated dimensional limits.

Joints wider than 40 mm, unusual movement demands and complex geometries require project-specific technical review.

The sealant should adhere to the two opposing joint faces so the bead can deform as designed.

Prevent adhesion to the joint base because three-sided adhesion can restrict deformation and concentrate stress.

Use a compatible, correctly sized closed-cell polyethylene backer rod installed dry, clean and without puncture or excessive compression.

Use a compatible project-approved bond-breaker tape where joint geometry does not permit a suitable backer rod.

Figure - Joint width and depth

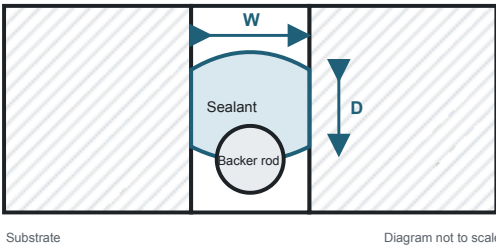


Figure 4.1 - Joint width W and sealant depth D. Diagram not to scale.

Figure - Backer rod function

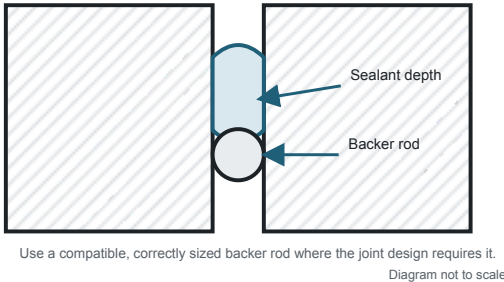


Figure 4.2 - Backer rod position. Diagram not to scale.

Figure - Fillet joint

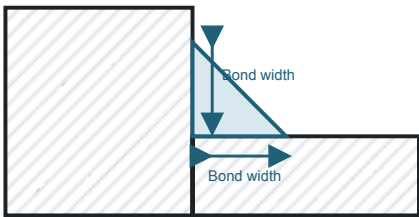


Figure 4.3 - Fillet-joint bond surfaces. Diagram not to scale.

Product-specific joint dimensions

MOVEMENT CAPABILITY

±35 %

WIDTH : DEPTH

Preferred 2:1; permitted approx. 2:1 to 4:1 ratio

MINIMUM WIDTH
6 mm

MINIMUM DEPTH
6 mm

MAXIMUM DEPTH
15 mm

Correct - Two-sided adhesion

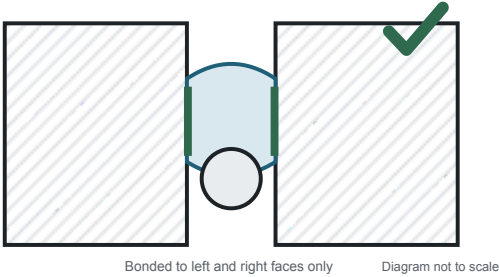


Figure 4.4 - Two-sided adhesion.

Avoid - Three-sided adhesion

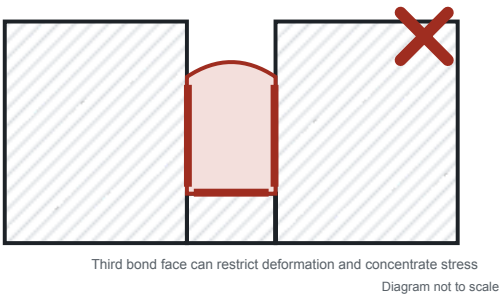


Figure 4.5 - Three-sided adhesion can concentrate stress.

Theoretical sealant coverage

Pack volume	300	mL
Joint width	10	mm
Sealant depth	6	mm

5.00 m

Theoretical coverage excludes joint irregularities, substrate porosity, overfilling, tooling and start-up loss, package loss, waste and variation in actual joint dimensions.

Application conditions and procedure

Application conditions

AMBIENT TEMPERATURE +5 to +40 °C
SUBSTRATE TEMPERATURE +5 to +40 °C
CARTRIDGE TEMPERATURE +15 to +25 °C
MAXIMUM HUMIDITY No separate maximum stated; prevent condensation % RH
DEW-POINT MARGIN ≥3 °C

Apply only to clean, dry, stable and frost-free substrates. Condensation, standing water, frost, ice and uncured cleaner are not permitted.

Protect freshly applied sealant from direct rain for at least 24 hours under normal curing conditions; extend protection in adverse conditions.

Do not apply to frosted, icy, condensed or visibly wet substrates.

Do not apply above the stated +40°C substrate limit. High temperature can shorten skin and tooling time and increase application difficulty.

Low temperature and low relative humidity can extend tack-free time, reduce cure rate and delay final adhesion and mechanical-property development.

Minimize early joint movement and protect the joint from direct rain, dust and contamination until sufficient cure has developed.

Surface preparation

Non-porous substrates

Remove grease, processing residues, and other contaminants with a documented cleaner compatible with the substrate.

Use clean lint-free cloths and a two-cloth cleaning method where approved.

Porous substrates

Remove laitance, weak layers, dust, old coatings, and other bond-inhibiting material; mechanically prepare where required.

Remove preparation dust completely and apply an approved primer only where the tested system requires it.

Existing sealant replacement

Remove old sealant and residue from the bond faces; a residual silicone film may interfere with new adhesion.

Reassess the original substrate, coating, joint geometry, backing material, and cause of failure before resealing.

Priming

Primer is not a cleaner and cannot replace correct surface preparation.

Primer selection depends on the actual substrate, finish, exposure, sealant, and project test result.

WR550 must not be described as universally primerless. Omit primer only after satisfactory adhesion testing using the actual substrate, coating, cleaner, application method and exposure condition.

Application procedure

- 01

Confirm joint dimensions

Confirm calculated joint width, sealant depth, movement demand, and access before work starts.
- 02

Remove old sealant and contaminants

Expose sound bond faces and remove contamination using the approved preparation method.
- 03

Install backing

Install the approved backer rod or bond-breaker without damaging adjacent surfaces.
- 04

Apply primer where required

Apply only the tested primer at the approved coverage and within its flash-off and open-time limits.

Figure - Two-cloth cleaning method

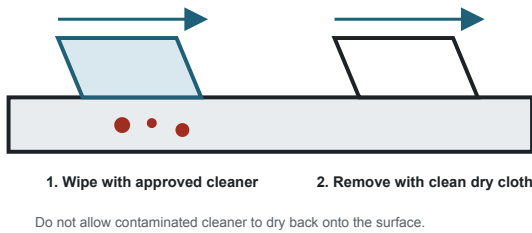
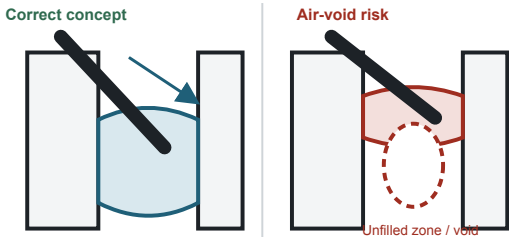


Diagram not to scale

Figure 5.1 - Two-cloth cleaning framework. Diagram not to scale.

Figure - Continuous filling and air-void risk



Gun angle is illustrative only; maintain continuous contact with the joint base.
Diagram not to scale

Figure 5.2 - Continuous filling from the joint base. Diagram not to scale.

05	Mask joint edges Mask adjacent surfaces where a controlled edge is required.
06	Prepare the nozzle Cut the nozzle to suit the joint geometry and required bead size.
07	Apply continuously Apply continuously from the bottom of the joint with the nozzle embedded in fresh sealant, filling the joint completely and maintaining contact with both bond faces.
08	Avoid air entrapment Use a controlled application method that minimizes voids and incomplete contact.
09	Tool within working time Tool firmly against both joint faces before skin formation. Use dry tooling unless an approved alternative method is specified.
10	Remove masking Remove masking immediately after tooling without disturbing the finished bead.
11	Protect early cure Protect the joint from direct rain for at least 24 hours under normal conditions and from dust, contamination and excessive movement until sufficient cure develops.
12	Record site information Record product batch, substrate, cleaner, primer, joint dimensions, date, and site conditions where project quality control requires it.

RISK / QUALITY CONTROL

Limitations, project testing and document control

Limitations

CATEGORY / OBJECT	RISK	REQUIRED ACTION / ALTERNATIVE	RESTRICTION
Structural glazing: Wind load, glass dead load, and permanent structural load transfer	WR550 is not positioned as a structural glazing sealant.	Use a dedicated structural glazing system with project design, testing, technical approval, and quality control.	not-claimed
Permanent water immersion: Aquariums, pools, water-pressure joints, drinking-water contact, and long-term immersion	Short-term rain exposure does not establish suitability for permanent immersion.	Use only a specifically approved product and system.	not-claimed
Fire-rated joints: Fire-resistance or smoke-seal systems	Product naming and general sealant behavior do not establish a tested fire-resistance system.	Use a tested firestop system with matching evidence and installation design.	not-claimed
Natural stone: Porous natural stone and visible edges	Potential staining, migration, or color change.	Complete a stain test and consider a dedicated stone silicone.	conditional
Plasticized materials: EPDM, neoprene, butyl, bituminous material, membranes, and plasticized plastics	Possible migration, discoloration, adhesion loss, surface tack, or cure interference.	Complete product-specific compatibility and adhesion tests using actual materials.	conditional
Low surface energy plastics: PE, PP, and PTFE	Reliable adhesion is difficult under ordinary surface-preparation conditions.	Obtain specialist technical review and testing.	conditional
Painting: Paint or coating applied over cured sealant	Coating may bead, crack, or show inadequate adhesion.	Use the actual coating system for compatibility testing; do not assume paintability.	conditional
Confined spaces: Fully enclosed or moisture-restricted joint geometry	Moisture-curing material may cure slowly or incompletely.	Review cure access, geometry, and application-specific alternatives.	conditional
Sensitive uses: Food contact, medical use, drinking-water contact, and other regulated sensitive applications	No dedicated approval has been supplied.	Do not claim suitability without current application-specific certification.	conditional

Common causes of sealant failure

- Incorrect product selection or unverified material compatibility
- Insufficient joint width, excessive sealant depth, or three-sided adhesion
- Contaminated substrate, residual old silicone, condensation, or weak coating adhesion
- Premature exposure, excessive movement during cure, incomplete contact, air entrapment, or insufficient cure in confined conditions

Packaging, colors and storage

PACKAGE	300 mL cartridge; 600 mL foil sausage			
STORAGE TEMPERATURE	+5 to +27 °C			
SHELF LIFE	12 months			
AVAILABLE COLORS	Black	White	Grey	Clear
				

Store in original, unopened and undamaged packaging and follow label manufacturing and expiry information.

Store in a cool, dry and ventilated location protected from direct sunlight, rain, moisture, excessive heat and freezing.

Material beyond the stated shelf life must be re-evaluated before use; damaged, swollen, leaking or previously opened packages require technical review for controlled façade applications.

Manufacturer and contact information

Foshan Haova Co., Ltd.

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Project testing and quality assurance

- Adhesion test: Verify sealant adhesion and preparation on actual project substrates.**
Complete an adhesion test using the actual production substrate, coating, cleaner and primer, with project-approved acceptance criteria.
- Compatibility test: Assess contact materials for cure interference, migration, discoloration, or other adverse interaction.**
Complete a compatibility test using actual adjacent materials and record cure interference, migration, discoloration and adhesion effects.
- Stain test: Assess visible staining or migration on sensitive porous substrates.**
Complete a stain test on the actual natural stone or sensitive porous finish before approval.
- Field adhesion test: Verify site preparation and installed adhesion under recorded conditions.**
Define field-test frequency and acceptance criteria in the project quality plan and record failure mode, joint contact, voids, dimensions and substrate condition.

The information and recommendations in this Technical Data Sheet are based on laboratory testing, technical knowledge and practical experience available at the date of issue. Unless expressly identified as specification limits, stated values are typical or individual tested values and are not batch acceptance specifications. Actual performance may be affected by substrate composition and treatment, joint design, application technique, temperature, humidity, curing conditions, adjacent materials and service exposure. The user is responsible for determining suitability and completing appropriate project-specific adhesion, compatibility, staining and field-performance tests. Nothing in this document constitutes an express or implied warranty beyond a separately issued written warranty or sales agreement. Refer to the current Safety Data Sheet and product label before handling or use. The latest officially issued revision supersedes previous versions.